

Getting Technical with TV&C...

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Work Sample Tests

What is a Work Sample Test?

Work samples can be defined as a broad class of assessment techniques that replicate job tasks or job behavior. Work sample tests are administered in a standardized manner and often allow for the observation of a candidate in performing the prescribed tasks. There are many types of selection tests that fall into the category of work sample. These tests are characterized by the manner in which the work sample is performed and are further detailed below.

Verbal Work Sample: Work samples may be *verbal* if the test involves a problem-solving task requiring language skills and may include interacting with people. Verbal tests can simulate the task in either a written or oral scenario. For example, a verbal work sample may entail a scenario requiring the applicant to solve a managerial dilemma while interacting with an actor who is role-playing a problem employee. A verbal work sample test in written format might present the applicant with a written job-related scenario and require the applicant to choose from a list of possible actions to take in order to resolve the issue presented in the scenario.

Motor Work Sample: Work samples may also be categorized as *motor* if the test involves physical activity or the physical manipulation of things. Examples of motor work sample testing, more commonly referred to as *performance testing*, could include a physical agility obstacle course for a firefighter applicant or assembling a computer chip for an electrical engineer.

High Fidelity Work Samples: Work sample tests with high fidelity are designed to actually replicate the job. These tests predict performance with great accuracy. Candidates must actually perform the tasks as they would on the job. As mentioned above, one type of a high fidelity performance test is the physical ability test, which is common for jobs that require physical activities and movements. The job-related scenario role-play mentioned under verbal work samples is another example of a high fidelity work sample test because it involves the candidate addressing the issue, on the spot, exactly as he or she would on the job.

Low Fidelity Work Samples: Work sample tests with low fidelity simulate the task in a written or verbal description and elicit a written or verbal response. For example a low fidelity work sample may present a written job-related scenario to candidates who must then choose from a list of actions to take or a candidate may orally describe the actions he or she would take without actually performing them.

Examples of Work Sample tests: Work sample tests can differ in various ways. Tests may assess more “natural” abilities, such as a walking test or “learned” skills such as trouble shooting a software programming error. Examples of work sample and performance tests include:

- repairing a piece of electronic apparatus
 - delivering a presentation
 - participating in an employee counseling exercise
 - lifting 50 lbs. and carrying it for 50 yards
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- participating in an assessment center
 - taking a low fidelity written test
 - video-based situational judgement test

What are the Advantages of Work Sample Testing?

Validity: The main advantage of work sample tests in personnel selection is that validity is often quite high. By closely replicating tasks performed on the job, the resulting assessment tool often has high predictive accuracy (i.e., an applicant who performs well on the test will also perform well on the job).

Candidate Acceptance: Another advantage of work sample tests is that they are generally high in *face validity*. When a selection instrument has face validity it means that it “looks” similar to the job. This often results in high acceptance by examinees. Employment case law and professional standards set forth guidelines for selection tests that place a good deal of emphasis the test’s job-relatedness and fairness. Therefore, a well developed work sample test with high face validity offers an additional benefit as it complies with professional standards and reduces the likelihood of challenges from candidates (i.e., if an applicant perceives a test as job-related she or he will be less likely to complain or take legal action).

Job Preview: High fidelity tests incorporate settings, equipment, and scenarios that closely approximate the job. These types of high fidelity performance tests offer a realistic job preview where participants get the chance to experience actual job duties and evaluate whether it is a personal fit. If a candidate decides the job is not right for him or her after having this realistic job preview and before accepting the job, this could reduce the chance of future employee turnover. If the candidate’s perception of the desirability of the job is increased as a result of the testing process, he or she may be more likely to accept the position with the work sample test over a position with a more ambiguous selection process.

Assessment Fit: Work sample tests allow for the measurement of behaviors not readily observed in other testing environments. Assessment fit means

that the most appropriate selection procedure available is used to assess job-related knowledge, skills, and abilities (KSAs). For example, it would not be appropriate to measure a firefighter candidate’s ability to carry a 150-pound person down four flights of stairs with a written test or interview.

What are the Disadvantages of Work Sample Testing?

The main disadvantage to developing and/or administering work sample and performance tests is the expense. Work sample tests are especially costly methods for testing large applicant pools. Work sample tests require observation by raters and quite often involve expensive equipment and special testing facilities. Another disadvantage is time. When testing a large candidate pool, the amount of time to individually observe and rate each candidate is significantly more than administering a written test where many candidates are able to test within the same time frame.

Despite the relatively higher costs and additional time of work sample tests, valid and accurate selection instruments are effective investments in the long term. The consequences of hiring an unqualified applicant could result in much more significant losses for the organization, or even worse, pose a threat to the public (such as in protective or healthcare services).

What Type of Jobs are Best Assessed by Work Sample Testing?

Certain types of jobs are better suited for assessment by a work sample test while other jobs may be more accurately assessed by other methods. Jobs that have critical duties, which are observable and/or physically performed, are ideal for performance testing. Some examples include:

- repair or maintenance technician
 - firefighter
 - police officer
 - instructor/teacher/trainer
 - heavy equipment operator
 - public information officer
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Jobs that have duties that are not observable, are more cognitive in nature, and/or jobs that require possession of a large body of knowledge, are more accurately assessed by a written test. For example, a job which requires analysis of statistical data and legal documents may be better assessed in written test because the testing format more accurately mirrors the manner in which duties are performed on the job. Examples of jobs that are better assessed by a written test may include:

- research scientist
- accountant
- legal research analyst
- civil engineer
- financial analyst

It is important to note that some jobs may be assessed by a combination of work sample and written tests. A thorough analysis of the job's tasks and KSAs will aid in determining the type of assessments that are most appropriate.

Standardization

Standardization of the selection process helps to ensure that every examinee is required to perform the same task or tasks in the same way and under the same conditions. Increasing the structure of the testing environment will improve the rater's ability to compare the examinee's performance to a predetermined standard and enhance the candidate's perceptions of fairness. Factors that the test developer should consider include:

- implement set timing procedures
- supply equipment that will suit all sizes of people
- give detailed and set instructions
- employ multiple trained raters
- have pre-defined scoring criteria
- train raters on the scoring system
- train raters on common rating errors
- ensure testing facilities control for weather and other environmental factors

Scoring Criteria

Scoring criteria should always be developed prior to the administration of a work sample test. By developing scoring criteria with high specificity, the test developer clearly defines the knowledge, skills, and abilities that the test is designed to measure. Test developers are able to determine the highly specific tasks performed on the job and the relevant KSAs by conducting a comprehensive job analysis. Job analysis typically involves a combination of the following methods: a literature review, interviews and meeting facilitation with subject matter experts (e.g., supervisors, incumbents), observation of incumbents at work, and administration of a survey containing questions concerning the job under analysis.

Pretesting

Through pretesting subject matter experts, potential problems with the test and time allowances for the administration can be identified. Pretesting also offers an opportunity to check the scoring criteria and ensure raters understand and appropriately apply the rating system. During pretesting, test administrators are also able to discuss the selection process with raters, and what to do in the event of certain circumstances (e.g., candidate injury, candidate cheating, malfunction of equipment, etc.).

Scoring Systems

Prior to administration, test developers must determine the appropriate scoring model. A *compensatory* model allows a candidate to make up for poor performance on some portions of the test by good performance on other portions. This scoring method is based on total points earned upon the completion of the entire selection process. Alternatively, some models require a candidate to successfully complete each of the tasks or steps in the process in order to pass the test (termed as a *conjunctive* scoring model). A scoring model, which requires the candidate to successfully complete only a specific component or set of components of the process, is called a *disjunctive*

model. Finally, a *hybrid* scoring model is some combination of the other methods. For example, a modified compensatory-conjunctive model would permit the usual compensating scores, provided that one or two critical steps were done correctly.

Keeping the Candidates Informed

As with any selection test, the candidates should be well informed of the selection process. Performance tests may include events that candidates can practice, or that require appropriate attire. To the extent that it does not compromise the test, keep candidates apprised of the process with a detailed job bulletin.

Safety Considerations

It is important to note the need to take precautions when it comes to safety during certain work sample tests. Specifically, when performance tests (motor work samples) require physical movement and are potentially dangerous in nature (e.g., a physical agility obstacle course, operating heavy machinery, lift and carry heavy weights), the candidate needs to be informed of all the possible risks and steps within the selection process. If potential risks exist, candidates should also sign a waiver of liability to the organization administering the test and a statement that they are aware of the risks prior to taking the performance examination.

In order to complete performance tests that require extensive physical action, candidates should be instructed to do preliminary warm ups and stretching in order to avoid potential injury. Test administrators should also be well trained to notice signs that a candidate is having trouble and needs help and/or needs to stop the test.

In addition, during high-risk performance tests it is imperative that medical supplies as well as an individual trained in first aid and CPR (preferably a test administrator or professional medic) are present, and that emergency procedures have been reviewed with all raters and proctors.

Other Uses

Work sample tests can also be used in contexts other than selection. An organization may wish to determine if current employees are lacking in critical skills or abilities to perform their job. The results of a well-developed work sample test could aid in the development of training that is better designed and tailored for specific needs of the employees and the organization.

Work sample tests can also be used to evaluate a training program. This is accomplished by administering the work sample test to employees prior to training and then administering the same test, or a parallel version after the training has been completed.

In Summary

The current monograph provides a basic introduction to work sample testing. It is important for test developers to analyze the advantages and disadvantages presented above in order to determine whether performance testing is the most appropriate and efficient method for testing candidates in a particular job classification. A thorough job analysis will identify how to best measure critical KSAs. As stated above, a properly constructed work sample or performance test can provide a very accurate measure of performance not readily measured in a written test.

